



November 2017

The Future of '5G' Depends on Diverse Spectrum Access Models

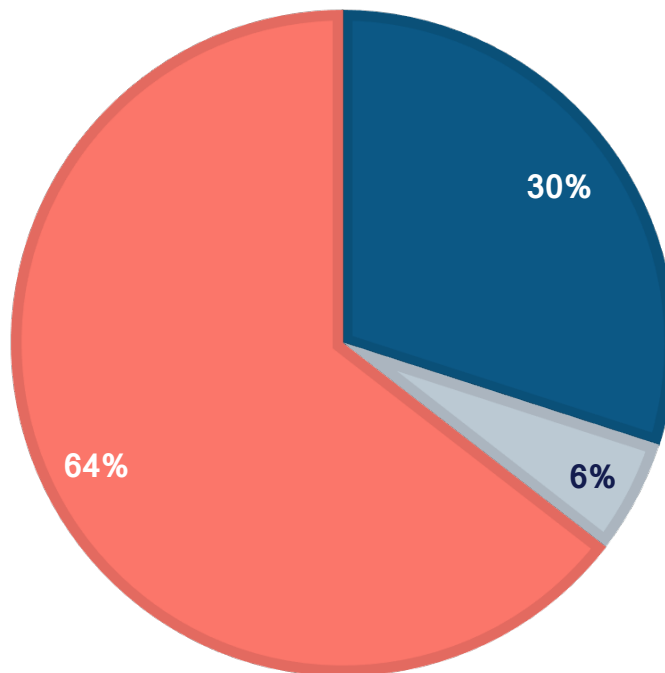
The United States, under the leadership of Chairman Pai, can lead the way globally on millimeter wave band technology and services

- The FCC recognizes the significant potential of these bands to deliver high-capacity broadband, and has worked swiftly to create certainty and clarity for some of these bands.
- The FCC took a balanced approach with spectrum access in the First R&O, creating exclusively licensed, licensed shared, and unlicensed access models.
 - 3,250 megahertz for exclusively licensed (plus another 1.7 gigahertz in the draft R&O)
 - 600 megahertz for shared use
 - 7,000 megahertz for unlicensed
- '5G' technologies are still in their infancy with infinite applications, only limited by imagination, innovation, and **spectrum access**.
- By creating a set of diverse licensing models, FCC recognized that a mass concentration of millimeter wave spectrum could stymie innovation in 5G technologies and shut out new innovations even before business models and technologies are realized.
- **Starry respectfully urges the Commission to 1) reject the Petitions for Reconsideration of the licensed shared spectrum access scheme in the Lower 37 GHz band; and 2) set a date for a Further Notice of Proposed Rulemaking to finalize rules for this band.**

Allocation of Spectrum in Spectrum Frontiers: First R&O

ALLOCATION OF MILLIMETER WAVE SPECTRUM: FIRST R&O

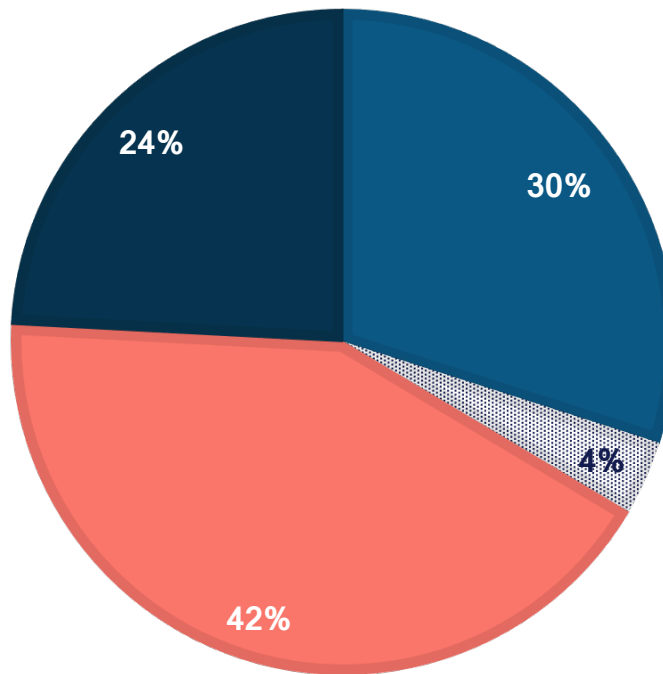
■ Exclusively Licensed ■ Licensed Shared ■ Unlicensed



Allocation of Spectrum in Spectrum Frontiers: Circulation Draft

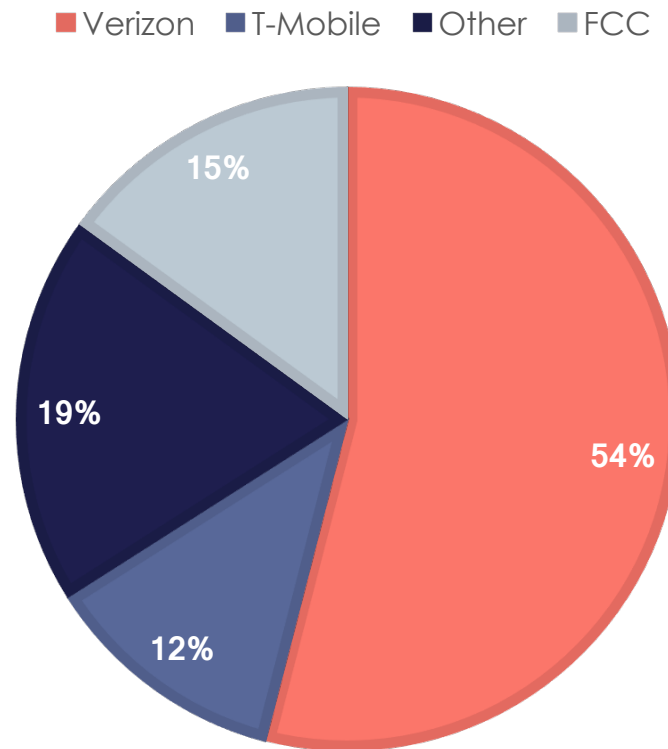
ALLOCATION OF MILLIMETER WAVE SPECTRUM: CIRCULATION DRAFT

■ Exclusively Licensed ■ Licensed Shared ■ Unlicensed ■ Exclusive Satellite



28 GHz Spectrum Holding by % of MHz-Pops

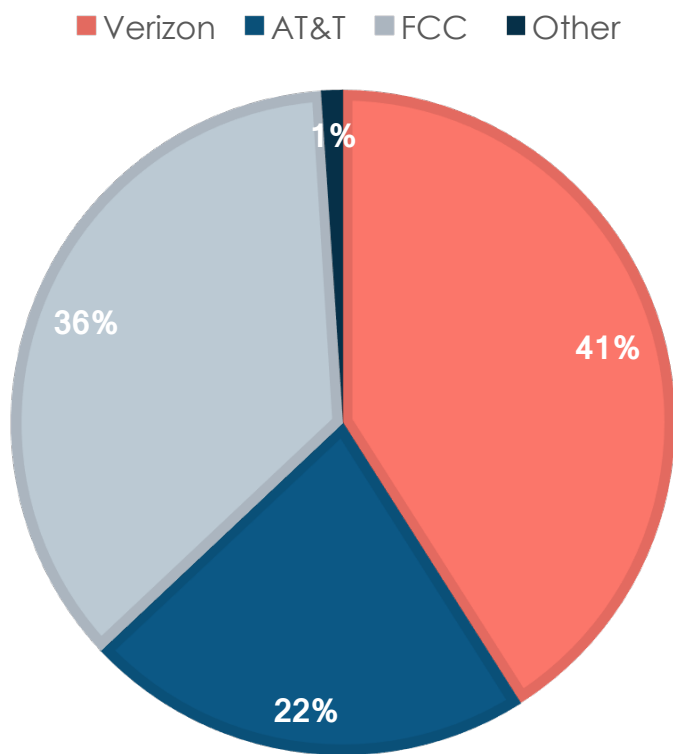
28 GHZ MHZ-POP BY LICENSEE



Note: this assumes the pending Verizon transactions close in the manner most favorable to the applicants.

39 GHz Spectrum Holding by % of MHz-Pops

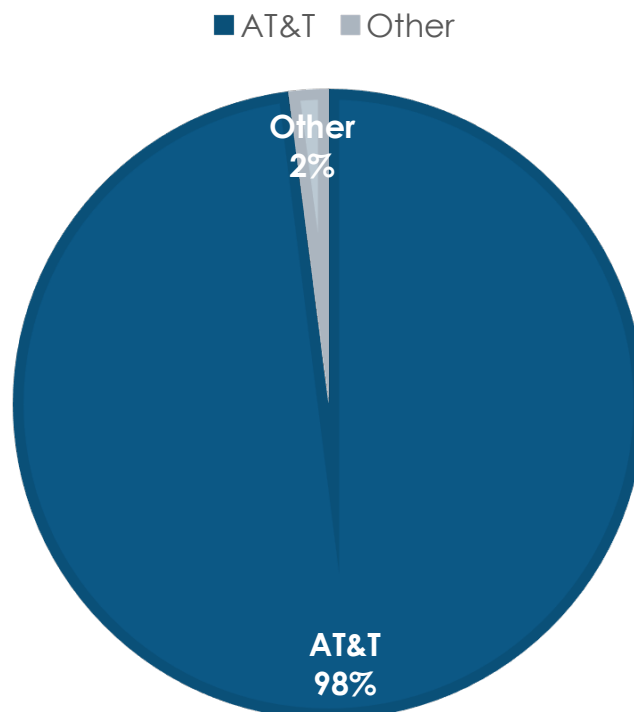
39GHZ MHZ-POP BY LICENSEE



Note: this assumes both the Verizon and AT&T transactions close in the manner most favorable to them; the analysis also excludes RSA licenses.

24/25 GHz Spectrum Holding by % of Available Licenses

24/25 GHZ AVAILABLE LICENSES



Note: this assumes the pending AT&T transaction closes in the manner most favorable to the applicants.

The FCC's Leadership on Spectrum Access Will Spur Investment in '5G' Technology Development

Starry and other innovators will drive significant investment in new technologies and services with clarity and certainty for shared licensed access

- There are limited near term opportunities for access to mmW spectrum before an FCC auction, and even then, few bands that lack a large incumbent.
- The high concentration of currently available mmW spectrum means that today, new technology entrants and their investors are forced to sit on the sidelines.
- But, by retaining shared licensed access, the Commission can help spur the development of a massive ecosystem of new technologies, services, and networks that multiplies the economic activity generated by exclusively-licensed spectrum.
- Rejecting the Petitions for Reconsideration of shared-licensed access in the 37-37.6 GHz band will send a clear signal to the market that spectrum will be readily available to a broad set of innovators.
- Starry respectfully urges the Commission to continue to move forward expeditiously with this proceeding, reject the Petitions for Reconsideration, and set a timeline for a Further Notice of Proposed Rulemaking to finalize the rules for the 37-37.6 GHz band.

Thank you.